

Curriculum Vitae

Fabrizio Arciprete

He received his Master's degree in Physics *cum laude* in 1991 from the University of Rome Tor Vergata, thesis: "*Electronic Characterization of high-Tc superconductors and transition metal-superconductor interfaces*", and obtained his PhD in Physics in 1995 with the thesis: "*Study of the formation of metal/GaAs(110) interfaces by means of electron energy loss and photoemission spectroscopies*".

- Since **December 2015** he is Associate Professor (permanent staff) of Condensed Matter Physics at the Department of Physics, University of Rome Tor Vergata.

- In **2017** he received the National Scientific Qualification to function as full professor in Italian Universities for the area of Experimental Condensed Matter Physics (02/B1).

- From **October to December 2015** he is Guest Scientist c/o Paul-Drude-Institut in Berlin in the Epitaxy Department for: "*Molecular Beam Epitaxy growth and characterization of Phase Change Materials based on Ge(Sb)Te alloys and GeTe/Sb₂Te₃ superlattices*".

- From **October to December 2014** he is Guest Scientist c/o Paul-Drude-Institut in Berlin in the Epitaxy Department for: "*Molecular Beam Epitaxy growth of the 2D crystal Sb₂Te₃ on several substrates*".

- From **1999 to 2015** he is Researcher (permanent staff) at the Department of Physics, University of Rome Tor Vergata.

- Between **1995 and 1999** he obtained several Post-Doc fellowships of the Italian National Research Council (CNR) and the National Institute for the Physics of the Matter (INFM).

F. Arciprete has participation in many national and international projects. Selection of funded projects:

H2020-ICT-2018-2: "*Boosting Performance of Phase Change Devices by Hetero- and Nano-Structure Material Design - BeforeHand*". Call/Topic: Electronic Smart Systems (ESS). Type of action: Research and Innovation action. 36 mesi. Total cost: 3999451.25 €. *Responsible of URTOV Unit* (270 K€).

RSA2017 - Mission Sustainability: "Strain Engineering of Bismide Alloys for Advanced Optoelectronic Applications" - 18 months 5000 €. University of Rome Tor Vergata, CUP: E86C18000320005. *Principal Investigator*.

RSA2015 - Consolidate the Foundations: "*GaAs_{1-x}Bi_x aLLoY: a potential candidate for Future Photonic Devices – BILLY*" – 18 months, 16500 €. University of Rome Tor Vergata, CUP: E82F16000400005. *Principal Investigator*.

Bilateral Mobility Project 2016-2018: “*Study of Bi-containing III-V alloys as potential candidates for a new 3-dimensional topological insulator*” – 15000 €. CNR-CAS (Czech Republic), cod. SAC.AD002.018.017.

PRIN 2007: “*Filling the gap between theory and experiment: toward the control of the growth and the properties of semiconductor nanostructures*” - 24 months, 146100 €. MIUR: cod. 2007S4FAA4_003 (in collaboration with: University of Modena and Reggio Emilia and CNR-IFN Rome).

PRIN 2005: “*Selective Nucleation of InAs Quantum Dots on GaAs(001) as single photon emitters*” - 24 months, 140000 € MIUR: cod. 2005025173_001 (in collaboration with: University of Florence, University of Modena and Reggio Emilia, and CNR-IFN Rome).

Research:

The current research activities of F. Arciprete include:

- 1) Growth and characterization of Phase Change Materials and 2D crystals based on the pseudobinary alloys GeTe-Sb₂Te₃ and GeTe/Sb₂Te₃ superlattices.
- 2) Molecular Beam Epitaxial growth and structural and electronic characterization of the GaAsBi semiconducting alloy as emerging material for Photonics and potential new Topological Insulator.

The past research activity of F.Arciprete has covered several topics:

- MBE Growth and characterization of the high lattice mismatched semiconductor heterostructure InAs/GaAs(001).
- MBE growth and characterization of Diluted Magnetic Semiconductors based on GaMnAs (Collaboration with the Nanoscale Science Department of Max-Planck-Institute in Stuttgart).
- Optical and electronic properties of semiconductor surfaces.
- Normal state electronic properties of high-T_c superconductors and their characterization.

- He is referee for Research Projects of Italian Minister of University and Research (MIUR). European Research Council areas: PE3_7, PE4_4, PE5_8.
- He is referee for international journals of the Elsevier Science, American Institute of Physics, MDPI AG, Nature Publishing Group, AIP.
- Since 2011 he is associated to the Institute of Structure of Matter (ISM) of CNR in Rome.
- Since 1992 he is associated to the National Institute for Physics of the Matter (INFN) and subsequently to the National University Consortium for the Condensed Matter Physical Sciences (CNISM).
- He is associated to the National Institute of Nuclear Physics (INFN).

Teaching:

- Since 2016 F. Arciprete is lecturer of the course: "*General Physics II*" for the Bachelor program in Chemistry.
- Since 2011 he is lecturer of the course: "*Introduction to Crystal Growth*" for the Master programs in Physics and Material Science and Technology.
- Between 2009 and 2011, he gave a series of lectures for the PhD School in Physics: "*Epitaxial Growth of Semiconductor Nanostructures*", "*Concepts in Crystal Growth: Molecular Beam Epitaxy*".
- He is supervisor and co-supervisor for many Bachelor and Master students in Physics and Materials Science and for PhD students in Physics.
- Between 2014 and 2017, F. Arciprete was member of the Academic Board of the PhD School in Physics (University of Rome Tor Vergata).

F. Arciprete has attended at many International Conferences and Workshops with many oral presentation and invited talks.

He is author of more than 90 publications on high impact factor international journals, several proceeding and book chapters.